

=== [1] Bootstrap Analysis - Parameter Estimation ===

Method: Resampling from original dataset (n = 70) with replacement,
1000 iterations

Estimated Weibull parameters:

- Beta (shape):
- 95% CI : [2.10, 3.22]
- Mean : 2.52
- Eta (scale):
- 95% CI : [23302.60, 28899.61]
- Mean : 25751.82

=== [2] Simulation - Lifetime Prediction ===

Method: Simulated 10,000 failure times from Weibull(beta=2.52,
eta=25751.82)

Predicted lifecycle percentiles:

- B10 (10% fail) : 10517.58
- B50 (median) : 22294.14
- B95 (95% fail) : 39537.00
- MTTF (Average) : 22784.46

=== [3] Reliability Estimation at 10000 Cycles ===

Method: Bootstrap reliability curve using 1000 resampled datasets

Estimated reliability at cycle = 10000:

- Median reliability : 0.909
- 95% Confidence Interval : [0.866, 0.949]

=== [4] Kolmogorov-Smirnov Test ===

KS Statistic (D): 0.0751

P-value: 0.7997

Conclusion: Simulated and actual data are likely from the same
distribution ($p > 0.05$).











